METHODS AND USE OF ACTIVATING ENDOGENOUS ION CHANNELS

Tech ID: 33351 / UC Case 2024-052-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

To gain a more comprehensive understanding of the contribution of specific cell populations to various physiological phenomena in an organism, it is crucial to control cells' activity using their native proteins, such as ion channels and GPCRs, while maintaining precise cellular and temporal resolution.

UC Berkeley researchers have pioneered a magnetogenetic technique named FeRIC (Ferritiniron Redistribution to Ion Channels), which combines the use of radio frequency (RF) magnetic fields and ion channels coupled with ferritin to control cell activity. The researchers demonstrated that the interaction between RF and ferritin produces ROS and oxidized lipids which ultimately activate the ion channels.

SUGGESTED USES

- Tool to activate ion channels to treat channel related diseases
- Activate astrocytes and make them produce molecules to treat glioma
- Research tool to activate ion channels

CONTACT

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INVENTORS

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OTHER INFORMATION

CATEGORIZED AS

- **Biotechnology**
  - Other
- **Materials & Chemicals**
  - Chemicals
- **Medical**
  - Research Tools
  - Therapeutics
- **Research Tools**
  - Other

RELATED CASES

2024-052-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Frequency Programmable MRI Receive Coil
- Tumor Infiltration Detection And Cell Density Mapping
- Multiphoton Magnetic Resonance Imaging
- Any-Nuclei Distributed Active Programmable Transmit MRI Coil